

Notice of Allowability	Application No.	Applicant(s)	
	09/714,627	HATTORI ET AL.	
	Examiner	Art Unit	
	Miranda Le	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/14/2005.
2. ☒ The allowed claim(s) is/are 1-2, 4-7, 11, 15-16, now renumbered as 1-9.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>10/14/2005</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Miranda Le
January 05, 2006

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Milan Kapadia on December 29, 2005.

2. The application has been amended as follows:

In the claim:

- Cancel claim 10.
- Claim 1 has been amended as:

A structured document search method for searching a structured document database, comprising:

accepting a search request in the form of a logical structured document;

analyzing the accepted search request to generate a search graph including graph nodes based on the logical structure, wherein the graph nodes represent one of a hierarchical-level relationship, sibling relationship, or ancestor-posterity relationship, and a variable to be embodied is inserted between the graph nodes; and

generating a search plan for a hierarchical structure possessed by a searched document, in which a search processing procedure for said structured document database is developed from said search graph, said generating the search plan including:

- (a) applying a plan generation rule to any one of said graph nodes, using a plan generation rule base including a plurality of plan generation rules, the plurality of plan generation rules each including rule application conditions, costs and search processing procedures, the plan generation rule having a cost less than that of applicable plan generation rules of the plurality of plan generation rules and wherein the plan generation rule can be arbitrarily registered or deleted in the plan generation rule base;
- (b) executing a search processing procedure of the applied plan generation rule for materializing said variable; and
- (c) repeating the applying and the executing thereby to complete said search plan; and acquiring search results satisfying said search request by executing said search plan.

- Claim 15 has been amended as:

A structured document search apparatus for searching a structured document database, comprising:

- means for accepting a search request in the form of a logical structured document;
- means for analyzing the accepted search request to generate a search graph including graph nodes based on the logical structure, wherein the graph nodes represent one of a hierarchical-level relationship, sibling relationship, or ancestor-posterity relationship, and a variable to be embodied is inserted between the graph nodes;
- means for generating a search plan for a hierarchical structure possessed by a searched document, in which a search processing procedure for said structured document database is developed from said search graph, said means for generating the search plan including:

means for applying a plan generation rule to any one of said graph nodes, using a plan generation rule base including a plurality of plan generation rules, the plurality of plan generation rules each including rule application conditions, costs and search processing procedures, the plan generation rule having a cost less than that of applicable plan generation rules of the plurality of plan generation rules and wherein the plan generation rule can be arbitrarily registered or deleted in the plan generation rule base;

means for executing a search processing procedure of the applied plan generation rule for materializing said variable to complete said search plan; and

means for acquiring search results satisfying said search request by executing said search plan.

- Claim 16 has been amended as:

A computer program stored in a computer readable medium for searching a structured document database, the program comprising:

means for instructing a computer to accept a search request in the form of a logical structured document;

means for instructing the computer to analyze the accepted search request to generate a search graph including graph nodes based on the logical structure, wherein the graph nodes represent one of a hierarchical-level relationship, sibling relationship, or ancestor-posterity relationship, and a variable to be embodied is inserted between the graph nodes;

means for instructing the computer to generate a search plan for a hierarchical structure possessed by a searched document, in which a search processing procedure for said structured

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document database is developed from said search graph, said means for instructing the computer to generate the search plan including:

means for instructing a computer to apply a plan generation rule to any one of said graph nodes, using a plan generation rule base including a plurality of plan generation rules, the plurality of plan generation rules each including rule application conditions, costs and search processing procedures, the plan generation rule having a cost less than that of applicable plan generation rules of the plurality of plan generation rules and wherein the plan generation rule can be arbitrarily registered or deleted in the plan generation rule base;

means for instructing a computer to execute a search processing procedure of the applied plan generation rule for materializing said variable to complete said search plan; and

means for acquiring search results satisfying said search request by executing said search plan.

3. The following is an examiner's statement of reasons for allowance:

The present invention is directed to a structured document search method allowing to specify various searches for the hierarchical structure including ambiguous paths that a document possesses, without increasing the computation amount required for the search processing.

Claims 1, 15, 16 identify the uniquely distinct feature of "the plan generation rule having a cost less than that of applicable plan generation rules of the plurality of plan generation rules and wherein the plan generation rule can be arbitrarily registered or deleted in the plan generation rule base".

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The closest prior art, Nakatsuyama et al. (U.S. Patent No. 5,875,441), shows a substantially similar document database management system, which manages plural structured documents that are created according to a variety of document types, and a document database retrieval method for retrieving a structured document from plural structured documents that are created according to a variety of document types. However, Nakatsuyama et al. fail to anticipate or render the above-cited limitations obvious.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere, Esq., can be reached on (571) 272-3780. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le
January 5, 2006

